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10/576,371	01/18/2007	Gino Villata	1200.749	9467

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EXAMINER	
CHAU, TERRY C	
ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/576,371	VILLATA ET AL.	
	Examiner	Art Unit	
	TERRY CHAU	3655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 September 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) *5,7,9,19-29 and 32* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,4,6,8,10-17,30 and 31* is/are rejected.

7)☒ Claim(s) *18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 April 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/19/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This is the first office action on the merits for application 10/576,371 filed 1/18/2007.

Applicant's amendment to the claims filed 9/9/2009 has been entered. Claims 1, 3-32 are currently pending. Of those pending claims, claims 5, 7, 9, 19-29 and 32 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species.

Applicant's amendment to the abstract filed 4/19/2006 has been entered.

Applicant's amendment to the specification filed 4/19/2009 has been entered.

Election/Restrictions

Applicant's election without traverse of Species 2, Figure 9 in the reply filed on 9/9/2009 is acknowledged.

Claims 5, 7, 9, 19-29 and 32 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species.

Contrary to the Remarks filed 9/9/2009, claim 21, as amended on 9/9/2009, depends on claim 20 which is a nonelected/withdrawn claim.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 4/19/2006 has been considered by the examiner.

Specification

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

Claims 14 and 31 is objected to because of the following informalities:

Regarding claim 14, “a control surface” in line 5 should be --the control surface-- as the control surface is previously recited in parent claim 13.

Regarding claim 31, “upstream pressure Ph” and “downstream pressure Ph” should just be --upstream pressure-- and --downstream pressure--. It is unclear whether Ph is a reference character. If Ph is a reference character, the upstream pressure and the downstream pressure, which appear to be different pressures, should be labeled as such. Furthermore, reference characters in the claims should be placed in parenthesis.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 17, 18 and 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the body" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the pedal" in line 20. There is insufficient antecedent basis for this limitation in the claim.

Claim 17 recites the limitation "the point" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 18 recites the limitation "the elastic assistance force" in line 2. There is insufficient antecedent basis for this limitation in the claim. Element 106 appears to be the elastic assistance element. See parent claim 11.

Claim 18 recites the limitations "the upstream pressure Ph" and ”the downstream pressure Ph”. There is insufficient antecedent basis for these limitations in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 4, 6, 8, 10, 11, 30, 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Coupland et al. (US 4,821,518).

Coupland et al. discloses:

Regarding claim 1:

Hydraulic control system (system including booster device of figures 1-3 and the master and slave cylinders) for a clutch in particular for a motor vehicle, comprising

an upstream sending cylinder (not shown; connected to 2) connected by a conduit to a downstream receiving cylinder (not shown; connected to 3), so as to form a hydraulic control circuit, characterised in that

it comprises an assistance cylinder (1) that is interposed in the conduit, between the sending cylinder and the receiving cylinder, and which comprises

at least one assistance piston (4) that is mounted so as to slide axially in the body of the assistance cylinder between an upstream engagement position and a downstream disengagement position, so as to delimit an upstream hydraulic chamber (chamber between 2, 4, and 10) and a downstream hydraulic chamber (chamber between 3, 4, and 10) with variable volumes according to the axial position of the piston,

the upstream chamber being connected to the sending cylinder by a portion of hydraulic circuit referred to the upstream circuit and the downstream chamber being connected to the receiving cylinder by a portion of the hydraulic circuit referred to as the downstream circuit,

each hydraulic circuit portion comprising a means (9, 11, 12, 13, 14; see lines 62-67, column 1) of relevelling the volume of fluid connected to at least one fluid reservoir, and in that

the assistance cylinder comprises an assistance device (5, 6, 7, 8) that applies an assistance force (see lines 24-29, column 1) to the assistance piston during the declutching phase,

wherein the assistance device comprises a regulation means (5, 6, 7, 8) which makes the value of the assistance force vary according to the travel of the clutch control pedal in accordance with a predetermined assistance law (see lines 7-25, column 2; the force as a function of the piston travel can be modeled by one of ordinary skill in the art).

Regarding claim 3, the assistance device comprises a transmission member (6) which transmits the assistance force to the assistance piston.

Regarding claim 4, the transmission member is connected in terms of axial movement to the assistance piston in both directions of sliding of the piston.

Regarding claim 6, the transmission member is arranged at an axial end (the axial ends on 4 contacting 6).

Regarding claim 8, the assistance cylinder comprises at least one discharge orifice (13) which makes at least one hydraulic chamber (downstream chamber) communicate with a fluid reservoir (9), when the assistance piston is occupying its upstream position, so as to compensate for the variations in hydraulic volume in the hydraulic circuit over time (see line 62, column 1 to line 6 column 2).

Regarding claim 10, the discharge orifice comprises a valve (14) that is controlled by the axial movement of the assistance piston.

Regarding claim 11, the assistance device comprises an elastic element (8) which stores energy during the engagement phase and which restores the energy during the disengagement phase in order to produce the assistance force (during the two phases the elastic element stores and restores energy).

Regarding claim 30, the piston comprises at least one elastic element (8) that returns the piston towards its upstream position (see lines 18-23, column 2).

Regarding claim 31, the assistance device comprises a regulation means (5, 6, 7, 8) which varies the value of the assistance force according to the upstream pressure in the upstream chamber of the assistance cylinder or the downstream pressure in the downstream chamber or a combination of the two pressures according to a predetermined assistance law (the relationship between the assistance force provided by the regulation means and the upstream and downstream chambers can be modeled by one of ordinary skill in the art).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coupland et al. (US 4,821,518) in view of Stotz (US 3,200,597).

The teachings of Coupland et al. have been discussed above.

Regarding claim 12, Coupland et al. does not disclose that the regulation means is a cam mechanism which is driven by the axial movement of the piston and which regulates the assistance force produced by the elastic element during the disengagement phase.

Stotz discloses a hydraulic control system in which the regulation means (12, 14, 18, 19, 22, 28, 29) is a cam mechanism (28, 29) which is driven by the axial movement of the piston (8) and which regulates the assistance force produced by an elastic element (18) during the disengagement phase. *Although Stotz only explicitly discloses that the cam mechanism varies the displacement of piston 8 in Operation, it is noted that, inherently, the varying displacement would also result in an associate varying assistance force as per claim 1. Also, see MPEP 2112.01. When the structure recited in the reference is substantially identical to that of the claims, claimed properties are presumed to be inherent.*

It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the regulation means of Coupland et al. with that of Stotz in order to provide the hydraulic control system of Coupland et al. with varying assistance force in accordance with another predetermined assistance law based on the curved cam tracks 29 of Stotz. Stotz indicates that such a mechanical actuating mechanism for changing the transmission ratio is simple and inexpensive (see lines 31-

47, column 1). *In modifying the hydraulic control system of Coupland et al., the regulation means of Stotz may be attached to the right side of piston 4 of Coupland et al. in an enlarged upstream hydraulic chamber with spring 18 of Stotz pressed against input port 2 of Coupland et al. Other means of modifying the hydraulic control system of Coupland et al. with the teachings of Stotz are also conceivable by one of ordinary skill in the art at the time the invention was made.*

Regarding claim 13, in the hydraulic control system of Coupland et al. as modified by Stotz, the assistance device of is housed in the cylinder body and in that the cam mechanism comprises at least one control surface (29 of Stotz) that is produced on an internal wall of the cylinder body (of Coupland).

Regarding claim 14, in the hydraulic control system of Coupland et al. as modified by Stotz, the elastic assistance element is an axial compression elastic element (18 of Stotz) that is interposed axially between a cup (14 of Stotz) and an abutment surface (2 of Coupland) fixed with respect to the assistance cylinder body,

in that the cam mechanism comprises at least one movable roller (28) which travels over the control surface between an upstream position and a downstream position corresponding respectively to the upstream and downstream positions of the assistance piston, and

in that the movable roller is connected by a first connecting rod (23') to the piston by a second connecting rod (23) to the cup.

Regarding claim 15, in the hydraulic control system of Coupland et al. as modified by Stotz, the axis by which the connecting rods pivot on the movable roller is

concurrent with the rotation axis of the roller (see figure 1 of Stotz).

Regarding claim 16, in the hydraulic control system of Coupland et al. as modified by Stotz, the control surface comprises an upstream portion (B of Stotz) inclined with respect to the sliding axis, and a downstream portion (C of Stotz) roughly parallel to the sliding axis so that,

during a first part of the disengagement phase, the movable roller moves first of all on the inclined portion towards the axis and in the downstream direction, from its upstream position, transmitting part of the relaxation force of the elastic assistance element to the assistance piston, by a step-down effect, and then,

during a second part of the disengagement phase, the movable roller moves on the downstream portion in the downstream direction, in a roughly axial direction, transmitting all the relaxation force of the elastic assistance element to the assistance piston.

Regarding claim 17, Stotz does not discloses the distance between the pivot axes of the second connecting rod is such that, in the upstream position of the movable roller, the roller moves in the upstream direction beyond the point on the control surface where the second connecting rod is perpendicular to the control surface.

However, Stotz discloses that the inclination of section B of the curved track may be changed (see lines 45-57, column 3). It is possible to change the inclination of section B such that that the roller moves in the upstream direction beyond the point on the control surface where the second connecting rod is perpendicular to the control surface.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the inclination of section B in view of the teachings of Stotz that changing the inclination may correspondingly change the travel of the assistance piston.

Allowable Subject Matter

Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lambert (US 3,630,027) discloses a hydraulic linear amplified apparatus for power brake structures.

Espenshied (US 3,752,282) discloses a clutch with plural fluid releasing means.

Parsons et al. (US 4,378,676) discloses a booster for a hydraulic clutch system.

Muller et al. (US 5,127,506) discloses a clutch actuating system.

Arnold (US 5,279,204) discloses a fluid operated mechanical power amplifier.

Tischer et al. (US 5,301,781) discloses a clutch for vehicles.

Rohs et al. (US 6,435,327) discloses a disengaging device for a clutch.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TERRY CHAU whose telephone number is (571)270-5926. The examiner can normally be reached on Monday-Friday 9:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Le can be reached on 571-272-7092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TERRY CHAU/
Examiner, Art Unit 3655

/David D. Le/
Primary Examiner, Art Unit 3655
01/19/2010